

# Reducing Toxin Exposure for Workers in Western Agriculture: Development of Sustainable Alternatives to Soil Fumigation

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**Problem:** Many conventional soil fumigants used to protect crops in Western agriculture have been identified as being toxic and/or carcinogenic.

**Project Overview:** Biosolarization is a new technique that has the potential to serve as an alternative to toxic soil fumigation and is less damaging to health and the environment. This project tests whether biosolarization is effective in controlling agricultural pests and if it can substitute for soil fumigation for pest management.

**Progress to date:** Experiments were conducted to examine biosolarization in the context of the California almond industry, which accounts for a large percentage of the nation's almond production. Volatile fatty acids (VFAs) were found accumulated in the biosolarized orchard soils. VFAs are generally less toxic than conventional fumigants, which benefits orchard workers.

**Anticipated Project Outputs:** Project results will provide growers with information on the efficacy, safety, and health benefits of biosolarization and how to adopt biosolarization as an alternative to conventional soil fumigation.

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